



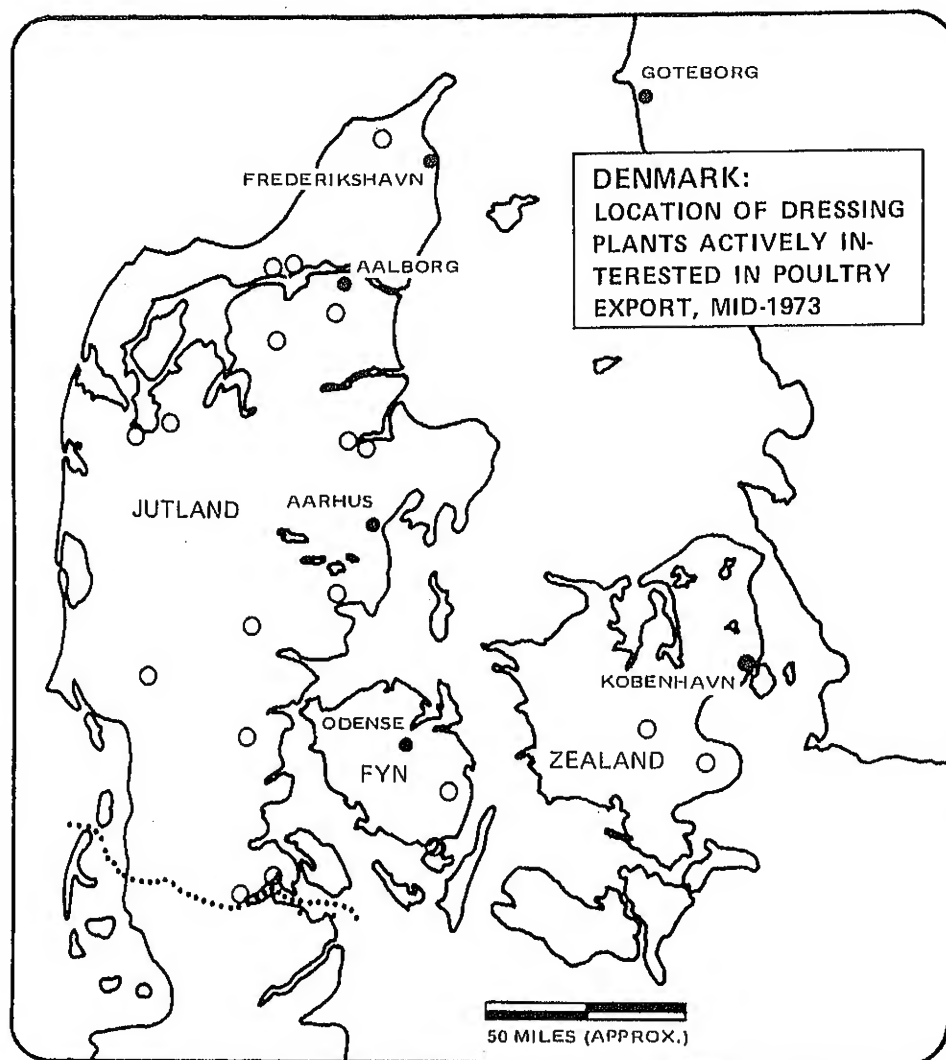
# **THE DANISH POULTRY MEAT INDUSTRY**

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**October 1974**



About one-third of the poultry dressing plants in Denmark—and predominantly the large ones, with capacities over 25,000 birds daily—are the source of Denmark's poultry exports. The country was in 1972 the world's third largest exporter of poultry, after the Netherlands and the United States.

### CONVERSION FACTORS

At the time the field work for this report was under way, in June-July 1973:

U.S. \$1.00 = 5.6 Danish kroner  
D. kr. = 17.85 U.S. cents

Metric equivalents of U.S. measures are:

0.454 kilo, or 454 grams	= 1 pound
1 kilo (kilogram) or 1,000 grams	= 2.205 pounds
1 metric ton	= 2,205 pounds
1 meter	= 39.4 inches
1 square meter (m <sup>2</sup> )	= 10.8 square feet

Approximate Danish conversions for various forms of broilers are:

100 pounds live weight yield 83.5 pounds slaughter weight (live minus blood, feathers, head, and shanks, including feet), which in turn yield 75 pounds ready-to-cook (eviscerated), including giblets.

## Foreword

Denmark, the world's third largest poultry exporter, is an important U.S. competitor and is now a member of the European Community. Upon EC entry on February 1, 1973, Denmark became subject to the EC Common Agricultural Policy for Poultry. This report highlights the resultant significant changes affecting the Danish poultry industry and the Danish consumer.

Danish production and processing costs significantly exceed U.S. costs.

Prior to entry into the EC, Denmark maintained a Home Marketing Scheme that made it possible to place product into export at prices much lower than prevailing internal prices so exported products could compete with subsidized EC products. The Danish consumer in effect paid a consumer tax on all poultry meat purchased. With the entry into the EC, Danish internal prices are lower with a significant consumer consumption response. The consumer prices, however, will still be higher than if product were marketed under a free and open system.

Denmark's entry into the EC now provides it access to the world's largest poultry meat import market, West Germany. The combined effect of increased domestic consumption and exports to West Germany could result in lower export availability of Danish product.

Another poultry-producing member of the EC—one of the original Six—was the subject of an FAS report in August 1972 entitled "The Netherlands Poultry Meat Industry," a discussion of the production and marketing costs and other relevant factors of the broiler and turkey industries of that country. Such information was important to the United States because the Dutch are the world's largest exporter of poultry meat, and, therefore, an important competitor of the United States in the international market. The United States is the second largest poultry meat exporter. The report showed that the United States had a slight edge over the Netherlands. However, the efficient Dutch producers, at that time and at present, are excessively protected against imports by the EC gate price and variable levy system, and unnecessarily benefit from the EC export subsidies. Efficient third-country producers find the EC and the EC export subsidies expose them to unfair subsidized competition in third-country markets.

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# The Danish Poultry Meat Industry

By Edward Karpoff, Dairy and Poultry Division

## Summary

Denmark is the world's third largest exporter of poultry meat, as the result of using export subsidies. In this position, Denmark has been a strong competitor of U.S. exporters of whole chickens and parts. U.S. exports of poultry meat in 1972 were valued at \$48 million and, in terms of equivalent live weight, amounted to about 1½ percent of total poultry production. For the turkey sector of the U.S. industry, exports were equivalent to almost 2 percent of live-weight production.

Denmark's participation in the EC's Common Agricultural Policy (CAP) for poultry became effective February 1, 1973. On that date, Denmark gained vastly improved access (and soon thereafter, free access) to the markets of West Germany, the world's largest poultry import market. Prior to enlargement of the EC, the Netherlands had held the favored external supply position with respect to Germany.<sup>1</sup>

This obvious benefit to Danish poultry producers carried with it necessary adjustments. Membership in EC required abandonment of Denmark's pre-existing Grain Plan and the Home Marketing Scheme, which respectively established the level of cost for feed, the largest expense in poultry production, and assured necessary subsidies for the production of poultry output beyond the offtake of the domestic market. In place of these schemes Danish producers are now subject to the EC CAP for Cereals, and the EC Poultry CAP with its export subsidy system.

An already-evident increase in Danish home consumption of poultry meat is an additional new factor in the Danish poultry situation. It follows from the shifts to the EC system from a solely Danish system of poultry "guidance" which, through January 1973, taxed the domestic sale of poultry. This internal tax is now removed. By the summer of 1973, the expected consequence of this removal—a reduced domestic retail price—contributed to the increased domestic offtake of poultry. This increased domestic use will compete with export availability so far as the distribution of supplies, and therefore competition in international markets, is concerned.

The reaction in the next few years of the Danish poultry industry to the potentially changed factors of production cost and product price is perhaps the most uncertain of the factors that will be critical to the establishment of a new equilibrium. In the summer of 1973, and for some months preceding, poultry meat production was judged to be less profitable to the farmer than production of either pork or milk. Additionally, for the short run the 1973 turmoil in the feedstuffs markets (both proteins and cereals) and in meat prices is likely to introduce more violent short-term imbalances in the broiler industry than in other animal industries, because the broilers' short production cycle invites quicker production adjustments than can be achieved with swine or cattle.

These uncertainties affecting the Danish farmer who produces broilers may be more serious in effects on volume of production than similar uncertainties in the United States. In Denmark, the economic risks during the broiler growing period initially fall largely on the farmer. Although he can take steps to shift some of those risks, the hazards of price change and catastrophe leave him more vulnerable than is the producer operating under the usual American type of production contract. Under the prevailing American system of integration, slaughtering plants can proceed with assurance that supplies to meet future slaughter schedules will be available, as long as the plant lets production contracts under the prevailing terms.

Yet another uncertainty concerns the reaction of present suppliers in the big West German market should the Danish poultry industry elect to attempt increased deliveries. Such reaction from domestic German producers and from the Netherlands may take the form of price competition, reorientation of export destinations and/or quantities, or production adjustments. Particularly as these may occur in the Netherlands, the world's largest poultry meat exporter, these potential changes can affect conditions in third-country markets where the United States has or could develop poultry market interests.

In supplying markets equidistant or nearly so, the U.S. industry is more competitive than the Danish. Factors favoring the United States are (a) lower feed and chick costs, (b) lower processing costs, (c) greater geographic-concentration of the industry, permitting economies from greater specialization and shorter hauling

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<sup>1</sup>"World Trade in Poultry and Eggs Up in 1971," FPE 3-72, Foreign Agricultural Service, December 1972.

of mixed feed and live birds<sup>2</sup>, and (d) the development by the U.S. industry of a more extensive line of products—particularly further-processed convenience items.

These advantages are offset to some degree, however, by (a) the export orientation of the Danish industry (which in 1972 exported almost two-thirds of its poultry meat output), (b) the greater willingness of the Danish industry to adapt its basic product (the whole broiler) to the preference of export markets, and most importantly (c) the availability of EC subsidies for deliveries to third-countries (i.e., non-EC countries).

All told, the Danish broiler industry does not seem a prospect for a strong growth enterprise. Despite adaption of mechanical labor-savers to compensate for labor shortages on farms and in dressing plants, the availability of dressing plant personnel is one impediment to continued fast growth, and so is the new high level of feed prices, as compared with earlier norms. These will temper the encouraging effects of rising domestic demand for poultry, and the new access to markets in West Germany, so far as the outlook for the Danish poultry industry is concerned.

## Onfarm Organization

In Denmark "co-ordination" is the preferred term to describe the economic organization of broiler production. The American form of contracting is viewed with some disfavor, despite the similarities between the two systems.

The Danish farmer who produces broilers typically makes transactions in two areas—slaughter and feed—and possibly in a third—chicks. He—not the processor or feed supplier—makes the coordinating decision in the first two—slaughter and feed—and accordingly negotiates contracts that result in broiler production. Only occasionally do farmers grow broilers without covering contracts for either feed or slaughter.

Probably the most critical of the areas where the farmer must consider commitment is with the slaughtering plant (in Denmark commonly called a slaughterer). The farmers' options are (a) to undertake a contract wherein he commits himself to start a number of chicks on a certain day and to grow them for pickup by the slaughtering plant, or (b) to deliberately decline this option.

In the first option, the farmer would negotiate a price with a chosen slaughterer. The agreed price would generally have some close relation to the current price. Such a contract might run as far as a year ahead although a single brood at a time is more common. Under this arrangement the slaughterer normally arranges the chick purchase for the farmer. Most broilers except those grown for Denmark's cooperative slaughtering plants are grown on the contract price basis.

In the second option—no contract—the farmer would be free to make whatever arrangement he wished as maturity approached for his broilers. He would then get the "day price," usually fractionally lower than the contract price negotiated for birds being delivered about the same time. But, if chickens were especially scarce, the relation between the day and the earlier contract prices might be reversed. And, in any case, the farmer would have greater option as to whether to grow the chickens to light or heavy weights (at the same time possibly anticipating market changes), and to choose among competing slaughterers. An offsetting consideration, however, is the possibility that slaughter capacity might be fully committed, or nearly so, for the time when the noncontracted chickens are ready.

The price arrangements made for poultry delivered to Denmark's cooperative slaughtering plants are somewhat different, however. These plants, merged in 1971 into a single organization called Danpo, slaughtered 38 percent of Denmark's 1972 poultry production. Danpo's membership is between 500 and 600 farmers.\*

Danpo announces a weekly paying price for poultry, on a slaughtered-weight basis, and this becomes the dominant noncontract price for live birds in the country. (Other slaughterers may state prices on a liveweight basis, but they attempt to maintain a competitive relationship.) The announced price is intended to yield an operating profit for the co-op, and this profit is retained in a revolving fund for eventual payback to patrons.

If a past patron of Danpo continues to raise broilers but does not sell them to Danpo, he forfeits the equivalent of 10 to 15 øre per kilo out of his share of the preceding year's retained earnings.

Danpo controls a hatchery with a capacity of about half of Denmark's chick output. Also, in order to maintain its slaughter volume, Danpo raises broilers for its own account in addition to buying broilers from member-farmers. These broilers raised by the co-op in mid-1973 were reported to be a third of the organization's then-current slaughter.

Unless arrangements are made through the slaughterer, the farmer buys chicks from one of the several hatcheries supplying the industry. The chicks may be supplied under a continuing "understanding" with an

ct, but see Appendix Table 5.

the low broiler profits of preceding months, DANPO was involuntarily reorganized

unwritten commitment to present all requirements to the given hatchery, or it may be on an individual-brood transaction. In the former case there may be some discount from the nominal current price.

The opportunity to contract his feed supply for his up-coming brood, or possibly even further in the future, almost locks in the farmer's prospective return, assuming normal productivity. He can secure a firm price for all the ration necessary for the flock in question. Further, at certain seasons of the year (when markets seem stable, and when the contract will not cross from one grain crop to the next), the feed supplier sometimes will join the farmer in a contract as far as 6 months ahead.

When the prospective profit from available slaughter contracts and feed contracts does not indicate a satisfactory return from the broiler growing operation, the farmer naturally is reluctant to undertake the operation. At this point there occurs one very important difference from U.S. practice. In the United States, the return to the grower is only very slightly affected by current or even prospective market situations, because the U.S. contract typically pays off on numbers of chickens raised or pounds delivered. Under the U.S. practice, the grower's willingness to produce is thus hardly affected by the market whereas the Danish broiler producer will reduce or suspend his operation under unfavorable market prospects. In the United States, such possible retrenchment is at the discretion of the integrator,<sup>3</sup> whose motivations are governed by aspects of strategy more complicated than a judgment of one-brood profit prospects.

Nevertheless, Danish production has been remarkably stable in the past few years. The explanation lies in the fact that before EC entry the gross relationship between the feed price and the broiler price had also been held remarkably stable. This has been accomplished by subsidies incorporated into the return of the broiler-producing farmer.

However, the domestic policy instruments that thus stabilized the industry—Home Marketing Scheme, Grain Fund—ended operations as of January 31, 1973, the day before the EC's CAP became effective in Denmark. At about the time this shift was pending, and after it occurred, prices for both feed and poultry were increasing sharply on account of non-policy-related factors, so conclusions cannot be drawn about the interplay of policy-influenced prices under the CAP, farmers' profit, and stability of production.

## Onfarm Costs

The 1973 unrest in world markets for feedstuffs—particularly for proteins—and in exchange rates for currencies made it a difficult year in which to base costs of broiler production with an intended validity for any extended period. Fortunately, there exists for Denmark a body of information that describes costs under the price and supply situation of recent years, and presents the data in a form that permits translation into reasonable alternative situations that might be considered more representative of the mid-1970's.

That body of information is the summary of economic results of the broiler-raising operations on account-keeping farms reporting in the annual report of Landsudvalget for Fjerkræavl (4). In recent years, almost 9 percent of the broilers produced have been on farms cooperating with this agency. The flocks reporting through this agency doubled their returns per square meter (meter<sup>2</sup> or m<sup>2</sup>) in the 5 years 1967-72 even in the absence of significant broiler price increase in most of the period; this indicates considerable success in adopting progressive production techniques as a means of increasing net returns, despite onfarm costs sharply higher than U.S. cost.

Table 2 is intended to cover all costs except labor and housing. The return for labor and housing is viewed in Denmark as the farmer's "profit" for the operation. This would make the gross margin comparable in concept to the typical contract return which the U.S. farmer receives under his broiler growing arrangement, except that the Danish farmer risks an out-of-pocket loss, a risk which is virtually nonexistent to the American farmer under the U.S.-type contract. And the sum of the cost items in table 2, reduced to a per pound or per kilogram basis, would be comparable to an integrator's production cost less his costs of providing flock serviceman's supervision, and less live haul costs.

Onfarm production costs for broilers in Denmark are higher than in the United States. The factors most clearly identifiable contributing to this difference are feed costs and chick costs. The disadvantage of the Danish producer with regard to these items increased with the devaluation of the dollar in 1973. On a per pound basis, U.S. costs in mid-1973 were more than 14 cents lower than Denmark's per pound of live broiler at the farm, at then-prevailing exchange rates.

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<sup>3</sup>The integrator is typically the slaughterer (as well as the supplier of chicks, feed, medication, and other services) who is the other party—beside the grower—in the typical U.S. broiler production contract.



Table 1.—Denmark: Trend in efficiency factors in broiler production, 1967-72 and selected periods 1971-73

Period	Reporting farms	Average flock size	Standardized live weight at slaughter <sup>1</sup>	Feed conversion ratio <sup>2</sup>	Percent birds in top grade	Losses		Flocks per year	Annual Production per m <sup>2</sup>	
						Mortality	Condemnation		By number	By weight <sup>3</sup>
12 months ending September	Number	1,000 birds	Grams	Kilos	Percent	Percent	Percent	Number	Birds	Kilos
1967.....			916	2.86	91.1	4.9	1.3	5.0	94	102.5
1968.....			977	2.81	91.9	4.3	1.1	4.9	72	103.4
1969.....			1,016	2.83	93.8	5.6	.8	5.0	97	111.0
1970.....			1,081	2.75	95.4	4.8	.6	5.3	107	126.7
1971.....			1,112	2.73	96.0	4.7	.7	5.2	107	126.1
1972.....	41	10.7	1,149	2.76	95.9	5.3	.8	5.5	114	130.0
3 months ending—										
December 1971.....		9.8	1,150	2.72	95.2	5.4	1.0			
March 1972.....		10.1	1,118	2.80	95.8	5.5	.9			
December 1972.....		10.1	1,211	2.67	95.9	4.4	.6			
March 1973.....	478	10.8	1,212	2.79	95.8	4.2	.7			

<sup>1</sup> Basis slaughter-weight at 50 days.

<sup>2</sup> Kilos of feed per kilo of slaughter-weight broilers produced.

<sup>3</sup> Slaughter weight.

<sup>4</sup> Number of flocks, not farms.

Source: Landsudvalget for Fjerkræavl, report for 1971-72 and preceding years, and supplementary reports for more recent periods. Copenhagen.

Table 2.—Live broilers: Comparative production costs, Denmark and United States, 1972 and mid-1973

Item and unit	Denmark				U.S., representative basis	
	In Danish units		Converted to U.S. units			
	October 1971 - September 1972	Mid-1973 (peak prices)	October 1971 - September 1972	Mid-1973 (peak prices)	1972	Mid-1973
Unit prices and conversion factors:						
Chick price, each; kr. or dol. ....	0.80	1.06	0.150	0.189	0.095	0.107
Ration cost, kr. per 100 kg., or dol. per cwt. ....	73.20	145.-	4.69	8.58	4.50	7.90
Mortality, percent. ....	5.3	5.3	--	--	4.1	4.0
Condemnations, percent. ....	0.8	0.8	--	--	3.6	3.3
Feed conversion ratio <sup>1</sup> ....	2.76	2.76	2.30	2.30	2.1	2.1
Av. wt. per bird, grams, lbs. ....	1,149	1,149	3.02	3.02	3.73	3.66
Costs, basis per kilogram slaughter weight or pound live weight:						
Chick cost <sup>2</sup> kr. or cents ....	.72	.95	3.86	6.4	2.62	3.01
Feed kr. or cents. ....	2.02	4.00	10.82	27.0	9.45	16.59
Misc. direct expenses, kr. or cents.	.15	.15	.80	1.0	.30	.30
Return for labor and bldg., kr. or cents <sup>3</sup> ....	.34	-.90	1.82	<sup>4</sup> 2.3	2.25	2.25
Total costs, on farm, kr. and cents	<sup>5</sup> 3.23	<sup>5</sup> 4.20	<sup>5</sup> 17.30	<sup>4</sup> 36.7	14.62	22.15

<sup>1</sup> Danish units based on slaughter weight 83.5 percent of live; U.S., liveweight.

<sup>2</sup> After allowance for mortality and for gratis chicks.

<sup>3</sup> For Denmark, balancing item against farm price; for U.S., grower payment plus allowance for fuel and litter.

<sup>4</sup> Including a return for labor and buildings at the 1971-72 average level.

<sup>5</sup> Price at farm.

Exchange rate, kr. per dollar in year ending 1972 = 7.07; mid-1973 = 5.6.

Source: Landsudvalget for Fjerkræavl, report for 1971-72 and preceding years, and supplementary reports for more recent periods. Copenhagen.

Potential labor efficiencies on the farms in the two countries are probably not much different, despite the, probably larger prevailing average flock size in the United States. One Danish flock owner, who did not personally work on his farm, remarked he was increasing his broiler housing from 50,000 to 100,000 bird capacity because his hired man was not fully employed.

Feed conversion efficiency as converted in table 3 to the U.S. basis is more favorable in the United States, but this is not necessarily indicative of a corresponding difference in economic efficiency of feed use. In its approach to broiler-producing customers, the Danish feed industry claims orientation toward highest profit chicken production, which is not necessarily the same as least-cost production or biologically most efficient feed conversion. This concept is stressed by company field men as well as by Government advisors. The feed efficiency concept in terms of feed conversion ratio is not ignored, but heavier emphasis is put on the concept of return per broiler or, better yet, return per square meter, as indicated in the last columns of tables 1 and 3.

In response to early pressures related to protein cost, the Danish farm advisory service performed a series of feeding trials that tested rations which were biologically suboptimal. They established that the lowest protein ration in the tested series, meeting only 70 percent of the accepted protein "requirements," was the most economic in terms of return above cost, although least efficient in terms of feed conversion. Publication of such findings facilitates acceptance by farmers of the concept "returns per m<sup>2</sup>," as well as the acceptance of formula adjustments by feed compounders.

Prior to the 67-øre broiler price increase in the summer of 1973 (see page 8), observers considered broiler production less profitable to the commercial-scale farmer than production of either pork or milk. However,

<sup>4</sup>"Slagtskyllingers Økonomisk Optimalt Proteinkrav," by Vagn E. Petersen. Meddelelse fra Forsøgslaboratoriets Fjerkræafdeling, Copenhagen, May 1973.

Table 3.—Denmark: Economic factors in broiler production,<sup>1</sup> 1966-67 to June 1973

Period	Principal costs		Feed conversion, <sup>3</sup> Kilos feed per kilo		At slaughter			Returns above feed and chick costs	
	Broiler ration, 100 kilos	Baby chicks <sup>2</sup>	Slaughter weight	Live	Age	Weight	Price per kilo slaughter <sup>4</sup> weight	Per broiler	Per m <sup>2</sup> per year <sup>5</sup>
12 months ending Sept.:	Kr.	Kr.	Kilos	Kilos	Days	Grams	Kr.	Kr.	Kr.
1967 .....	73.24	0.69	2.86	2.39	56	1,091	3.09	0.24	20.88
1968 .....	74.08	0.71	2.81	2.35	55	1,131	3.14	.31	26.35
1969 .....	74.08	0.78	2.83	2.36	54	1,143	3.24	.34	30.60
1970 .....	77.64	0.78	2.75	2.30	53	1,181	3.28	.40	39.60
1971 .....	77.29	0.79	2.73	2.28	52	1,180	3.21	.34	33.66
1972 .....	73.20	0.82	2.76	2.30	50	1,149	3.23	.39	41.73
3 months ending:									
Dec. 1971 .....	71.72	0.85	2.72	2.27	50.2	1,156	3.17	.42	45.53
Mar. 1972 .....	71.97	0.87	2.80	2.34	50.9	1,147	3.18	.24	25.07
Dec. 1972 .....	84.82	0.88	2.67	2.23	48.9	1,171	3.59	.56	62.70
Mar. 1973 .....	93.67	0.89	2.79	2.33	50.4	1,225	3.91	.56	61.53
Late June 1973 <sup>6</sup> .....	145.00	1.06	--	--	--	--	4.20	--	--

<sup>1</sup> See preceding table for additional related data.<sup>2</sup> Chick cost per broiler marketed.<sup>3</sup> Data reported on basis slaughter weight, which is 83.5 percent live weight, and 118 percent of ready-to-cook.<sup>4</sup> For birds of average quality as delivered.<sup>5</sup> Per square meter (10.76 square feet).<sup>6</sup> Personal observation.

Source: Landsudvalget for Fjerkrævelen, report for 1971-72 and preceding years, and supplementary reports for more recent periods. Copenhagen.

Table 4.—Denmark: Economic returns from feeding broiler rations at various protein levels, early 1973

Item	Amino acid content of ration, percent of biological optimum					
	70	76	82	88	94	100
Ration cost, kr/100 kg. ....	102.90	106.20	109.60	112.60	116.30	120.10
Wt. per bird, 54 days, grams .....	1,934	1,958	1,982	2,006	2,030	2,054
Feed conversion ratio, live wt. basis .....	2.11	2.08	2.06	2.03	2.01	1.99
Economic results:						
Return per bird, kr. ....	6.87	6.95	7.04	7.12	7.21	7.29
Specified costs, per bird, kr.:						
Chick .....	1.05	1.05	1.05	1.05	1.05	1.05
Feed .....	4.20	4.33	4.47	4.60	4.75	4.90
Margin between return and specified costs, kr.:						
Per bird .....	1.62	1.57	1.52	1.47	1.41	1.34
Per kilogram, live .....	.84	.80	.77	.73	.69	.65
Per square meter .....	25.08	24.01	22.88	21.86	20.83	19.55

Source: "Slagtskyllingers Okonomisk Optimal Proteinkrav," by Vagn E. Petersen, Middelelse fra Farsogslaboratoriets Fjerkræafdeling, Copenhagen, May 1973.

statistical series by which this belief can be illustrated are lacking. No data exist to compare percentage rates of return from investments in alternative Danish farm enterprises, nor are hourly rates of return for labor inputs in alternative enterprises available for comparison.

The most objective evidence on the relative unattractiveness of commercial broiler production was in the experience of a feed compounder whose nationwide firm in early 1973 had developed a contract with a designer of farm buildings, and offered structures to feed customers on favorable terms. To midyear, they had sold 30 hog houses and only one broiler house. But on the other hand, the Jutland Smallholders Association recommended that increases in broiler production would add to the incomes of smallholders under March 1973 conditions.

Observers held the belief that the total housing capacity in the Danish broiler industry was slowly increasing, with large-scale newer housing displacing small units. Flocks over 10,000 birds are increasing; in 1972 about four-fifths of the country's broilers were produced in such flocks, and in July of that year 225 farms had flocks of 10,000+.

Data on flock size in the United States do not come in perfectly corresponding form, but typical flock size in the United States is much larger than in Denmark. For example, in 1969 average sales per broiler-producing farm were 72,000 birds, suggesting an average flock size of about 16,000 birds at a 4½ flock-per-year turnover. Half of U.S. production in that year came from flocks of over 22,000 birds—i.e., the 7,600 farms in the largest reported size class selling over 100,000 birds during the year.

Table 5.—Denmark: Farms with young chickens, numbers of young chickens, and percentage of total, by flock size, as of midyear 1968-72

Category	1968	1969	1970	1971	1972
Total number of farms . . . . .	152,700	146,200	140,200	135,600	134,000
Farms with young chickens:					
Number . . . . .	( <sup>1</sup> )	7,311	6,415	5,993	6,486
By flock size:					
Under 1,000 . . . . .	( <sup>1</sup> )	6,794	5,886	5,561	6,057
1,000 - 4,999 . . . . .	175	144	160	96	91
5,000 - 9,999 . . . . .	161	155	172	124	116
10,000 - 24,999 . . . . .	174	171	153	142	149
Over 25,000 . . . . .	61	47	44	72	76
of which over 100,000 . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	5	8
Number of young chickens:	<i>In thousands</i>				
Total number . . . . .	6,991	6,362	6,943	6,731	7,288
By flock size:					
Under 1,000 . . . . .	721	335	347	249	283
1,000 - 4,999 . . . . .	446	387	514	245	238
5,000 - 9,999 . . . . .	1,051	1,010	1,313	866	819
10,000 - 24,999 . . . . .	2,327	2,316	2,693	2,083	2,208
Over 25,000 . . . . .	2,446	2,314	2,076	3,288	3,740
of which over 100,000 . . . . .	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	790	1,119
Percent of young chickens, by flock size:	<i>Percent</i>				
Under 1,000 . . . . .	10	5	5	4	4
1,000 - 4,999 . . . . .	7	6	7	3	3
5,000 - 9,999 . . . . .	15	16	19	13	11
10,000 - 24,999 . . . . .	33	36	39	31	31
Over 25,000 . . . . .	35	37	30	49	51
	100	100	100	100	100

<sup>1</sup> Not available.

Source: Landbrugsstatistik, Denmark's Statistik, Copenhagen, 1968 and subsequent years.

## Slaughtering and Costs

The Danish poultry processors visited during the preparation of this report uniformly volunteered that in their operations they were confronted by two major problems. The first was to assure a steady supply of live poultry on a schedule conforming to the operating program for the respective plants. The second was to assure the steady presence of an adequate work force. The problems evidently were of equal magnitude.

The contract system used by Danish processors does not guarantee slaughter volume to the processor to the same degree that the U.S. contract system does. In the United States, the economic risks, so far as out-of-pocket costs are concerned, are accepted by the processor. By accepting such risk, the U.S. processor can offer contracts to growers that give fairly stable returns to growers and thus maintain continuity of supply as well as some measure of control over the rate of industry growth.

In Denmark, where much economic risk is assumed by the farmer, typically the farmer will at least partly hedge that risk by a feed supply contract corresponding to a broiler delivery contract. Nevertheless under Danish conditions the farmer's position is far from the "no loss" position (with respect to out-of-pocket costs) of most U.S. broiler growers.

In Denmark, prior to EC accession, the Home Marketing Scheme and Grain Funds were used to create price relationships that permitted "hedge" opportunities for livestock and poultry producers, to a degree consistent with other national objectives. This favored continuity of supply.

Since termination of the Home Marketing and Grain Fund payments (and to some degree in anticipation of their termination) both poultry and feed prices have escalated in patterns very confusing to the poultry industry. The maintenance of reasonable profits to farmers, as a requirement for continuous supplies of live birds, was viewed by proprietary processors in June 1973 as being in jeopardy. They then agreed unilaterally that, regardless of existing contracts, effective July 9, 1973, the price paid for broilers should be increased by 2 øre per kilo per business day until an increase of 67 øre was attained. This increase was not submitted to the Monopolies Board; evidently it was believed that a convincing case for the increase based on farmers' costs could be supplied. (Because Danish poultry supplies for home use are not subject to the discipline of competition from supplies from other countries, the poultry industry is considered an economic monopoly and decisions taken in concert may be subject to approval by a national Monopolies Board.)

The poultry price action obviously looked beyond the immediate short term, since the unilateral liberalization of pre-existing contracts or arrangements means money out of pocket. This indicates a long view toward assuring supply on the part of the processing sector.

Possible similar actions with respect to labor, if they exist at all, are not known. Packinghouse employees together with other segments of organized labor participated in the general strike of early 1973, and won some concessions thereby.

A result of Denmark's high labor cost is great interest in automatic machinery and other means of saving labor. This pressure to conserve labor is also a possible explanation for the generally less tidy appearance of the Danish ready-to-cook broiler, as compared with the typical American product.

An automatic eviscerating machine, which is approved by the Danish sanitary authorities, is an example of adaptation to high labor cost. One plant spokesman explained that on a 4,000 bird-per-hour line his machine would pay for itself in 1½ years, and that it displaced 10 or 11 workers. A more conservative observer, an engineer engaged in development work on processing machinery, estimated 8 persons were displaced. In November 1973, one of the machine designs in use in Denmark was approved for use in the United States, and additional designs, including ones of U.S. manufacture, are also acceptable.

The eviscerator is the most notable labor-saver noted in Danish plants. Other savings come from practices that were reflected in product quality such as fewer people manning particular stations on the dressing lines. Unfavorable items that were noted included feathers remaining on the carcasses at points that were on the fringe of body areas accessible to the mechanical pickers; large number of remaining pinfeathers; presence of hair and down, since to singe was not a standard practice, and of oil sacs. Another American observer estimated that lung tissue remained in 90 percent of the carcasses. On carcasses to be sold as grillers, a short length of lower leg bone remained below the hock joint, where the foot normally is severed. Also, the surface appearance of carcasses intended for freezing did not conform to the U.S. ideal—where it is preferred that the "cuticle" or "bloom" remain on the skin of the dressed bird. This requires a low-temperature scald, which in turn requires more labor at subsequent stages than is needed for the high-temperature scald used in Denmark.

On the other hand, in some ways the broiler processed in the Danish plant better meets the requirements of some markets than does the American chicken. Small size, for example, close calibration as to size, and skin

Table 6.—Denmark: Producer prices, including subsidy, for top-grade broilers, basis slaughter weight, weekly January 1971 through mid-1973<sup>1</sup>

Week ending (1972 dates)		1971			1972			1973		
		Price to producer	Subsidy elements in price		Price to producer	Subsidy elements in price		Price to producer	Subsidy elements in price	
			Grain fund	Home market- ing scheme		Grain fund	Home market- ing scheme		Grain fund	Home market- ing scheme
<i>Kroner per Kilo</i>										
January	1	3.10	0	0.689	3.00	.053	.583	3.45	.530	.530
	8	--	--	--	--	.106	--	3.50	.265	.795
	15	--	--	--	--	--	--	--	--	--
	22	--	0.053	.636	--	--	--	--	--	--
	29	--	--	--	--	--	--	3.55	<sup>2</sup> 0	<sup>2</sup> 0
February	5	--	--	--	--	--	--	3.60	--	--
	12	--	--	--	--	--	--	3.70	--	--
	19	--	--	--	--	--	--	3.75	--	--
	26	--	--	--	--	0	.742	3.80	--	--
March	4	--	--	--	--	--	--	3.90	--	--
	11	3.05	--	--	--	--	--	3.95	--	--
	18	--	--	--	--	--	--	4.00	--	--
	25	--	--	--	--	--	--	4.05	--	--
April	1	--	--	--	--	--	--	4.10	--	--
	8	3.00	--	.530	--	--	--	--	--	--
	15	--	--	--	--	--	--	--	--	--
	22	--	--	--	--	--	--	--	--	--
	29	--	--	--	--	--	--	--	--	--
May	6	--	--	--	--	--	--	4.15	--	--
	13	--	--	--	--	--	--	--	--	--
	20	--	--	--	--	--	--	4.20	--	--
	27	--	--	--	--	--	--	--	--	--
June	3	--	--	--	--	--	--	--	--	--
	10	--	--	--	--	--	--	--	--	--
	17	--	--	--	--	--	--	--	--	--
	24	--	--	--	--	--	--	4.30	--	--
July	1	--	.159	.424	--	--	--	--	--	--
	8	--	--	--	--	--	--	--	--	--
	15	--	--	--	--	--	--	--	--	--
	22	--	--	--	--	--	--	--	--	--
August	5	--	.106	.477	3.05	.053	--	--	--	--
	12	--	--	--	--	--	--	--	--	--
	19	--	--	--	3.10	.106	--	--	--	--
	26	--	--	--	3.15	.159	--	--	--	--
September	2	--	.053	.530	3.20	.212	--	--	--	--
	9	--	--	--	--	--	--	--	--	--
	16	--	--	--	3.25	.265	--	--	--	--
	23	--	--	--	3.30	.318	--	--	--	--
	30	--	--	.583	--	--	--	--	--	--
October	7	--	--	--	--	--	--	--	--	--
	14	--	--	--	3.35	--	--	--	--	--
	21	--	--	--	--	--	--	--	--	--
	28	--	--	--	--	--	--	--	--	--
November	4	--	--	--	3.40	.422	.636	--	--	--
	11	--	--	--	--	--	--	--	--	--
	18	--	--	--	--	--	--	--	--	--
	25	--	--	--	--	--	--	--	--	--
December	2	--	.053	--	--	.530	.530	--	--	--
	9	--	--	--	--	--	--	--	--	--
	16	--	--	--	--	--	--	--	--	--
	23	--	--	--	3.45	--	--	--	--	--
	30	--	--	--	--	--	--	--	--	--

<sup>1</sup> No entry in the table indicates no change from preceding week.

<sup>2</sup> EC CAP became effective.

Source: Tabulations in Office of Agricultural Attaché, U.S. Embassy, Copenhagen.

color<sup>5</sup> are details to which the Danish industry pays great attention. All in all, these elements really mean that a broiler emerging from a Danish plant and an American one are not precisely the same product.

Because of these factors, as well as the reluctance of Danish sources to be highly precise in discussing costs, comparisons such as those in table 7 are broad interpretations. In addition, reservations must be made regarding the probability that those plants which were willing to indicate their costs were of better than average efficiency.

On a per-hour basis, payroll and associated costs are higher in Denmark than in the United States. As in the United States, on-line employees in the visited plants were mostly women. In Denmark, many are part-time workers, by employee preference; shifts are scheduled accordingly to permit time for housekeeping chores and child care. As an interesting offshoot from this preference, union provisions regarding equal treatment of men and women do not go so far as to include 8 hours pay for women for any day when a shift is called, since such provisions could cut both ways, obligating women to work the full day. If men are called for a shift they are assured 8 hours pay, but women are not.

In Denmark, an effective minimum wage of about 14.30 kroner per hour is enforced by the poultry packinghouse workers' unions. All commercial plants are reported to be unionized. Spokesmen for poultry slaughtering plants say—and union officials tended to confirm—that premium compensation for unpleasant work and incentives for more or better work have the effect of raising average direct hourly costs for nontechnical nonsupervisory employees to 16.00 kroner per hour. At the exchange rate of July 1973 (5.6 kr. = \$1) this was \$2.85, well above either the U.S. minimum hourly wage (\$1.60) or the commonly cited range of \$2.00 to \$2.50 as the level of wages in plants in the southeastern United States, where most U.S. production is concentrated.

<sup>5</sup>The preference for white skin color still exists in Denmark, but was claimed to be a less important consideration than in the past. For chilled chicken (as contrasted to frozen), a yellow appearance seemed fully acceptable, and possibly even preferred.

Table 7.—Broilers: Comparative processing costs and related items, Denmark and United States, mid 1973

Item and unit	Whole birds		
	Denmark		United States
	In Danish units	Converted to U.S. units <sup>1</sup>	
	Kr./kg.	Cents/lb.	Cents/lb.
Onfarm price or cost of broilers per kg. or lb. <sup>2</sup> .....	4.2	36.7	22.2
Live-haul farm to plant, .....		<sup>3</sup> 1.0	1.0
At-plant cost, live .....	--	37.7	23.2
Equivalent meat cost:			
Basis slaughter wt., 83-1/2% .....	--	45.2	
Basis r.t.c., 75% .....	--	50.3	30.9
In-plant costs, r.t.c. basis:			
Processing and chilling, .....	{ 1.4 - 1.8 }	{ <sup>4</sup> 13.0 }	<sup>5</sup> 8.0
Packaging; materials, labor, etc. ....			3.0
Meat cost plus in-plant costs. ....		63.3	41.9
EC export export subsidy .....	.83	6.7	--
Adjusted cost f.o.b. plant, for third-country exports .....	--	56.6	<sup>6</sup> 41.9

<sup>1</sup> At 5.6 kr. = US\$1.00.

<sup>2</sup> First figure is plant paying price per kilogram slaughter weight, which at the then-prevailing level was inadequate to cover onfarm costs. In the conversion to U.S. units—live weight per lb.—an adjustment has been made to offset this and to include a labor return. See appendix table 16.

<sup>3</sup> This figure is the generally accepted U.S. cost estimate for catching and hauling.

<sup>4</sup> Mid-point of range of preceding column.

<sup>5</sup> Poly-bags in master carton. Jumble pack would be cheaper, shrinkable film more expensive.

<sup>6</sup> Exclusive of cost for calibration, freezing, and related export costs which are supplementary to normal U.S. practice. This is estimated at 2-1/2 or 3 cents per lb.

Source of Danish data: principally trade interviews.

These levels, both for Denmark and United States, are exclusive of fringe benefits and other costs associated with payroll. In Denmark, fringes such as vacation, provisions for overtime and holiday pay, and employer-paid wage insurance to cover the risk of illness-related absence, amount to about 16 percent of direct payroll costs. In addition, about 3 percent more are payroll-related employer payments to government-stipulated social programs for unemployment insurance. In the United States, such fringe and associated costs, including employment-related taxes, add about 20 percent to the hourly labor costs—a very similar percentage.

In both countries wages are the largest single item in processing costs, so it is evident that there is a strong economic pressure on processors to adopt labor-saving procedures. An additional pressure to avoid dependence on large staffs follows from the great difficulties in assuring a continuing full complement of processing-plant staff.

## Poultry Parts

Parts are considerably less important than carcasses in Denmark's chicken exports. In January-April 1973, they were about 20 percent of the total. That percentage is double the estimated percentage of parts in domestic sales.

Two of the four plants visited were preparing poultry parts, one estimating that 20 percent of its export was thus prepared and the other 20 percent of his total output—in the latter case, "labor availability permitting." The first priority for plant labor was on the dressing line, and gaps there were made up by shifting women from the cut-up department.

Both plants said they found cutting and further processing operations profitable. Both said their plants were planning to increase the space and equipment available for the operation (one to double the size), and to increase staff accordingly. Conversations—not with plant operators—suggest that breasts, breast filets, and uncooked rolls (both of chicken and turkey) were good sellers in Switzerland, as well as breast filets in Italy and breasts in Germany. With these relatively assured outlets, the processor could prepare parts up to the limit of the sales opportunities for the remaining parts, particularly the dark meat—thighs and drumsticks. Backs and necks—in Denmark described as "backs, necks, and tails"—posed a particular problem, but some turkey necks

Table 8.—Denmark: Chicken exports, quantity and value, by commodity description, January-April 1973

Item	Quantity	Value	
		Total	Per kilo
Chicken, dressed (83%) <sup>1</sup> .....	<i>Kilograms</i> 256,861	<i>Kroner</i> 1,489,229	<i>Kroner</i> 5.80
Chicken r.t.c. (70%) .....	11,240,981	56,758,732	5.05
Chickens without necks (65%) .....	853,013	4,740,282	5.56
Deboned chicken meat .....	360,376	3,997,049	11.09
Halves and quarters .....	179,840	1,057,156	5.88
Wings, with or w/o tips .....	412,884	1,666,037	4.04
Backs, necks, tails, wingtips .....	371,413	585,025	1.56
Breasts and pieces .....	351,191	2,897,663	8.25
Legs and parts of legs .....	1,007,231	6,931,518	6.88
Other parts .....	88,063	389,274	4.42
Total .....	15,121,853	80,511,965	--

<sup>1</sup> Percentages refer to EC designations, not necessarily to literal yields from live weight.

Source: Unpublished export data.



found a relatively good outlet when packed and advertised to compete with the much desired ox-tail, as base for soup.

Processors were reluctant to be specific regarding costs of the cutting-up operation. From 2 to 4 percent weight loss was claimed in the cutting-up process. One plant manager claims this shrinkage, plus extra labor and packaging materials, required an extra return of 1.5 kroner per kilo to break even; he claimed the operation more than covered cost.

While at-plant prices were not available, declared export value of poultry parts offers a clue as to whether or not the necessary makeups were achieved. Parts seemed to be in better demand for export than in the domestic market; the 20 percent of chicken exported as parts exceeds the estimated 10 percent disappearance in the home market.

A novel machine at work in Denmark was reported to be at the heart of several successful parts-packing operations. As background to its importance, one must recognize the strong European preference for poultry packages which are sufficiently uniform to be identically priced "per package." This machine, making selections from a series of bins with pre-weighed parts in various closely sized categories, puts the last part on a tray so as to make the total weight on the tray come out at an exact preselected level within a very close tolerance. This machine saves labor and avoids the possible inclusion of extra product in a package typically intended to include only 300 or 400 grams.

One plant manager said that the now-defunct Home Marketing Scheme had the effect of making Denmark slow to begin the preparation of canned or frozen processed food items using low-cost chicken as an important ingredient. With the end of the Home Marketing plan, and access without levies to the former EC Six, he said his firm was undertaking development of such items. The Home Marketing system taxed even low-value poultry parts at a uniform rate per kilo, putting a disproportionately higher extra cost (percentagewise) on a low-value chicken ingredient. In addition, EC barriers formerly restricted the opportunity to recoup development costs.

## Turkeys

Denmark produced about 1 million turkeys in 1972, with an estimated commercial slaughter equivalent to 4.7 million kilos eviscerated. Production for 1973 was expected to be up 20 percent. Estimates were offered that two-thirds of this production is slaughtered by one firm. Twenty farms are reported to have produced 93 percent of the 1972 turkey output. These farms, plus other smaller producers, are reported to be the source of the prospective 1973 production increase, through larger flocks and increased number of broods through the season. Practically all of this production is reported to be under contract, or "coordination."

New producers evidently are not entering the business, although it is claimed currently to be more profitable than broiler production. The same study which projected Danish broiler production to increase only 3½ percent annually to 1980 (32 percent total increase, 1972-80) anticipated a 100-percent increase in turkey output for the period 1972-80. One of the participants in that study pointed to the prospective 20-percent increase in 1973 as support for the longer term projection.

Only two or three turkey breeders are active in supplying Denmark's poultry requirements. The attempted import of additional breeding stock in the early 1970's failed when approximately 1,000 poults in quarantine were found to have a Salmonella-type infection. Present strains and crosses, as well as the would-have-been imports, are all white-feathered; the female lines behind the production turkeys are based on Beltsville Small White origins, while the male lines are larger. From each breeder, the same standard lines supply the mini-turkeys, the mid-size, and the large.

Table 9.—Denmark: Usual ages and slaughter weights for turkeys, by class

Class	Age	Liveweight	
		Metric	Avoirdupois
Hens:	<i>Weeks</i>	<i>Kilos</i>	<i>Pounds</i>
Mini .....	10-12	3.0	6.6
Mid-size .....	14	4.3	9.5
Toms:			
Large .....	16+	7.5	16.5

Young hen turkeys—all slaughtered as mini's and mid-weight turkeys—are used as whole carcasses, for export as well as on the home market. In terms of numbers, more are slaughtered as mini's than at the heavier weight. The larger birds—males—are the basis for parts and further-processed items. As the basis for a further processing operation, the presently available "large" birds are small by U.S. standards, and meat yields are probably smaller relative to total carcass weight than would be obtained from a heavier bird.

Contract prices for live turkeys are closely held, and not publicly announced. They may not be identical to all producers. During the early summer of 1973 the contract prices to producers were believed to be on the order of:

Classification	Per kilo slaughter weight	Live weight equivalent	
		Per kilo	Per pound
	<i>Kroner</i>	<i>Kroner</i>	<i>cents</i>
Mini .....	8.15	6.92	56.0
Medium .....	6.85	5.82	47.1
Large .....	7.20	6.12	49.6

This price scale is reportedly higher than the 1972 scale. Under that lower scale, and at the lower level of costs then prevailing, one outstanding turkey producer is reported to have cleared 220 kr. (gross margin) per square meter devoted to turkey production. Comparable annual average returns to 41 broiler growers for 12 months ending October 1972 were much lower, at 42 kr. per square meter. In that group of broiler growers, the highest annual return per m<sup>2</sup> was 93 kr.

In Denmark, turkey poults in 1972 cost about 2½ kr. each. Ration specifications were claimed to be similar to U.S. standards and presumably, as in the United States, were priced in line with broiler rations. Feeding results, however, cannot be compared to the United States because Danish turkeys are slaughtered at much younger ages and lighter weights; at such ages and weights, feed conversion rates are more favorable than for the same birds if kept to heavier weights.

For whole turkeys, supermarket prices in Denmark were observed as follows: (June-July 1973) 2,300 grams, 31.20 kr.; 4,500 grams, 55.80 kr.<sup>6</sup> These prices were \$1.07 and \$1.00 per pound respectively for 5¼- and 10-pound birds. (All Danish retail prices include the 15 percent value-added tax.)

<sup>6</sup>These retail weights were plus or minus 50 grams.

Table 10.—Denmark: Exports of turkeys and turkey parts; by quantity, total value, and value per kilo, April 1973 and January-April 1973

Item	April 1973				January - April 1973			
	Quantity	Value			Quantity	Value		
		Total	Per kilo			Total	Per kilo	
			In currency	Relative to whole bird			In currency	Relative to whole bird
	<i>Kg.</i>	<i>Kr.</i>	<i>Kr.</i>	<i>Pct.</i>	<i>Kg.</i>	<i>Kr.</i>	<i>Kr.</i>	<i>Pct.</i>
Whole turkeys .....	68,332	516,732	7.56	100	219,053	1,620,144	7.40	100
Halves and quarters .....	--	--	--	--	19,484	118,416	6.08	82
Breasts .....	--	--	--	--	21,214	364,476	17.25	233
Legs and parts of legs .....	13,223	100,676	7.61	101	38,795	270,177	6.96	94
Other turkey parts .....	2,010	22,994	11.44	151	14,049	121,504	8.65	117
Total.....	83,565	640,402			312,595	2,494,717		

Source: Unpublished export data.

On account of the scarcity of wholesale turkey price information and the closeness with which it is held, the relative values attributed to export shipments of various turkey parts are the best available indication of relative market prices and opportunities.

Whole turkeys—at least in 1973—are by far the largest item among the turkey export categories.

Domestically, ducks and geese are the closest comparable items to whole mini's or middle-weight turkeys. Ducks are eaten domestically in larger quantity than turkeys<sup>7</sup> and are cheaper, but are generally considered less desirable on account of their high fat content—averaging about 30 percent. Geese are irregularly available at retail except at holidays, and are always much higher priced than turkeys of comparable weight.

## Domestic Offtake

Continuously rising incomes in Denmark in the past few years, and a relatively stable retail poultry price compared with rising prices for meats and fish, have been accompanied by an increasing domestic offtake of poultry. In January-June 1973 (including 1 month before EC membership) this increase put domestic use 36 percent higher than a year earlier. The population increase from a year earlier was less than 1 percent.

The most commonly available type of poultry available at retail in Denmark is the frozen, ready-to-cook broiler. The Danish housewife also finds an increasing availability of chicken parts. In addition, chilled chicken (as contrasted to frozen) has also been introduced to many retail groceries and butcher shops. The full sales potential of these latter forms of poultry is believed to be not yet attained. Combined with the favorable comparison of prices of chicken in contrast to alternative foods, this should give considerable impetus to further increases in Danish per capita chicken consumption. Chicken consumption historically had been low in Denmark despite the country's important status as a poultry exporter. For example, even if 1973 consumption exceeds 1972 by the 36 percent shown in January-June, the result would be 16 pounds per capita compared with 51 pounds estimated for the United States. By U.S. standards, retail prices continue high.

Displays of chicken parts in Danish retail freezer cases varied from nil to extensive. In the large supermarkets the displays given over to them were typically very orderly, as contrasted to the jumbled appearance of the much-larger bin for whole chickens, where housewives had obviously disturbed the stock in making their selections. No displays were seen of cut-up complete chickens; when parts were offered, the packages were all thighs, all drumsticks, etc.

Statistics of domestic disappearance of parts did not exist, and judgments were on the order of 10 percent of the home market. Attempts to confirm this estimate through the largest food chain in Denmark (though not the most aggressive merchandiser of parts) were unsuccessful.

The retail sales of chilled chicken are probably no larger than the total attributed to parts. As compared with frozen, the chilled birds sell at a premium of more than 1 kroner per kilo, reflecting the extra costs which processors claim are involved, given the present orientation of the Danish processing industry toward frozen birds.

At retail, the chilled birds were attractively wrapped on trays, individually weighed to the nearest gram, and priced according to the individual weight, whereas the frozen chickens had been sorted into size groups of a basic weight plus or minus 25 grams (i.e., such as 850 grams plus or minus 25) before being bagged and frozen, and each frozen bird in the same size group bore an identical retail price. This really means the chilled birds are sold by weight and the frozen birds by the bird, within the size class.

Denmark's retail prices through January 1973 were kept high by the Home Marketing tax. Since the home market return had to cover, typically, a 2½-kroner-per-kilo ready-to-cook tax equivalent, it was not surprising that, for the duration of the Home Marketing Plan, Danish retail prices were high. By observation, they were considerably higher than within the EC, as for example, West Germany.

The Home Marketing Scheme was applicable to pork, beef, and dairy products as well as poultry. However, the market price for beef was already above its target in the period immediately before Danish accession and pork was near the target, whereas poultry, significantly below the target, necessitated a consumer tax. As a consequence, for beef and pork there was little or no consumer tax whose withdrawal would lower the retail price significantly.

As a result, poultry became relatively more favorable to the consumer than beef or pork. In view of the relatively small share—less than a third in 1972—of total Danish poultry production that is consumed at home as contrasted to exported, there is opportunity for increases in home consumption. But the scale of the increased

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<sup>7</sup>Table 14 in the section on exports indicates that, after export, more duck meat than turkey meat remains for consumption in Denmark.

diversion to the home market in the first months after EC accession was so great that, in the likely event of the continuance of this diversion, it could restrict—and even reduce—Denmark's export availability of poultry meat in the next few years.

Table 11.—Denmark: Production and disposition of poultry meat, ready-to-cook basis, selected periods 1955-73

Period	Production				Disposition			
	Broilers	Other chickens	Turkeys	Total <sup>1</sup>	Domestic		Export	Total <sup>2</sup>
					Total	Per capita		
12 months:	1,000 m.t.	1,000 m.t.	1,000 m.t.	1,000 m.t.	1,000 m.t.	Kilos	1,000 m.t.	1,000 m.t.
1955 <sup>3</sup> .....	—	—	—	23.0	11.9	2.7	11.1	23.0
1960 <sup>3</sup> .....	26.6	13.9	0.3	47.5	14.8	3.2	<sup>4</sup> 38.5	47.5
1965.....	53.5	6.5	3.3	66.2	18.5	3.9	<sup>4</sup> 50.5	66.2
1970.....	61.4	3.6	5.2	79.0	25.1	5.1	<sup>4</sup> 49.4	79.0
1971.....	62.7	3.1	4.7	79.7	25.0	5.0	<sup>4</sup> 55.4	79.7
1972.....	68.3	3.9	3.1	85.3	27.1	5.4	<sup>4</sup> 52.6	85.3
January-June:								
1972.....				41.3	11.8		<sup>4</sup> 25.4	41.3
1973.....				45.0	16.0		<sup>4</sup> 26.2	45.0

<sup>1</sup> Including other species of birds, and slaughter on farms.

<sup>2</sup> Including stock change.

<sup>3</sup> For these years, data are based on the conversion of slaughter weight to ready-to-cook weight, at a yield of 84.75 percent.

<sup>4</sup> Product weight.

Source: Data in Office of Agricultural Attaché, American Embassy, Copenhagen, and computations based on those data.

Table 12.—Denmark: Representative supermarket prices for frozen poultry items, late June 1973

Item	Outlet A			Outlet B		
	Weight of package	Price—		Weight of package	Price—	
		of package	per pound		of package	per pound
Young chickens, parts, etc.:	<i>Grams</i>	<i>Kroner</i>	<i>U.S. dol.</i>	<i>Grams</i>	<i>Kroner</i>	<i>U.S. dol.</i>
Whole bird.....	950-1,050	12.98	1.05	1,150-1,200	11.95	0.82
Whole bird.....	675- 700	10.35	1.60	---	---	---
Griller.....	---	---	---	775- 825	10.15	1.03
Quarters.....	---	---	---	225	3.20	1.14
Chicken roll, raw.....	680	22.80	2.71	680	19.85	2.36
Breast fillets.....	290- 310	9.90	2.68	300	7.50	2.03
Legs (2).....	440- 454	8.40	1.52	---	---	---
Thighs.....	---	---	---	475- 500	7.85	1.31
Drumsticks.....	---	---	---	475- 500	8.60	1.43
Wings, backs, necks.....	---	---	---	454	4.35	.78
Livers.....	290- 310	5.35	1.44	475- 500	6.75	1.13
Hearts.....	475- 525	5.98	.97	---	---	---
Gizzards.....	---	---	---	475- 500	5.25	.88
Hens for soup or stew.....	1,550-1,600	18.85	.97	1,550-1,650	15.95	.81
---	---	---	---	1,650-1,750	16.95	.81
Turkeys.....	---	---	---	2,250-2,350	31.20	1.10
---	---	---	---	4,500	55.80	1.00
Ducklings.....	---	---	---	1,950-2,050	26.40	1.07

Note: None of the above items were indicated to represent special sales. In mid-July, a third outlet a frozen broilers at 74 U.S. cents per pound (equivalent).

Table 13.—Denmark: Slaughterers' costs for raw product and for Home Marketing Fee, for broilers, steers, and hogs, selected months 1972-73

Month and item	Broilers, first quality, slaughter wt.	Steers, live weight	Hogs, top quality, slaughter wt.
	<i>Kroner per kilogram</i>	<i>Kroner per kilogram</i>	<i>Kroner per kilogram</i>
September 1972:			
Cost of raw product.....	2.24	6.01	4.91
Home Mktg. Fee <sup>1</sup> .....	2.27	0	1.98
January 1973:			
Cost of raw product.....	2.57	6.39	6.00
Home Mktg. Fee <sup>1</sup> .....	2.03	0	.96
February 1973, total <sup>2</sup> .....	3.76	6.47	6.92
March 1973, total.....	4.01	6.46	7.42
April 1973, total.....	4.10	6.48	8.10
May 1973, total.....	4.18	6.46	8.42
June 1973, total.....	4.25	6.08	8.31

<sup>1</sup> Assessed against product for domestic market.

<sup>2</sup> Home Marketing Scheme discontinued January 31, 1973; totals for this and subsequent months are solely for raw product cost.

Source: Data in Office of Agricultural Attache, U.S. Embassy, Copenhagen.

## Exports

The 80,000-ton (1972) annual poultry slaughter of Denmark's 43 approved poultry slaughter plants<sup>8</sup> is supplemented by about 5,000 tons of small-scale slaughter. Of the output from the approved plants, 65 to 75 percent was exported in the 5 years preceding 1972. Of the large-plant (approved) output, 82 to 84 percent has typically been broilers, and 6 or 7 percent turkeys; of the exports, the total has been 87 to 89 percent broilers and 6 or 7 percent turkeys; and 70 to 80 percent and 55 to 85 percent, respectively, of broiler output and of turkey output from the approved plants has been exported.

To export poultry, a Danish dressing plant must meet the approval of the Ministry of Agriculture, its output must be inspected by the Veterinary Service in the course of slaughter and preparation, and the resulting product must be wholesome. A brochure for laymen, prepared by the Associated Export Boards, goes on to say—

"Every piece of Danish Export Poultry carries a red rosette on its wrapping—this is a guarantee that it is first class poultry. The rosette is the international trade mark that guarantees that the Danish poultry has been through a strict health control by a veterinary surgeon as well as a quality control by a qualified specialist."

An identical claim can be made for all U.S. Grade A poultry in export channels. Further, U.S. standards for the veterinary inspection are stricter.

The economic program under which Danish poultry is exported changed when the Home Marketing Plan was superseded by the CAP. Under the former, the export subsidy occurred through the existence of a two-price system, but was not for a fixed amount per exported unit of poultry. Under the CAP, the subsidy is through an EC payment to the exporter of a fixed amount per kilo exported, depending upon the commodity description and according to a schedule periodically revised and published from Brussels. For example, in July 1973 a Danish exporter qualified for a subsidy equivalent to 6.7 cents per pound for the export of whole broilers,

EC, Danish exporters evidently initially expected a considerable surge in exports to West Germany, a major poultry importer. Some observers suggested that expectations had been greater than the fact that Danish poultry exports to West Germany in January-June 1973 were

as of February 1972.

Table 14.—Denmark: Poultry production (slaughter) and exports, by class, 1955, 1960, and 1965-72

Year	Class					Farm slaughter	Total
	Broilers	Other chickens	Turkeys	Ducks	Geese		
Production:	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>	1,000 m.t. <sup>1</sup>
1955 .....	26.8	13.9	0.3	1.2	0.4	5.1	23.0
1960 .....	50.4	4.2	2.0	3.7	.8	5.1	47.5
1965 .....	50.7	4.5	3.3	3.4	.6	5.1	66.2
1966 .....	49.9	3.5	4.3	2.9	.5	5.1	67.6
1967 .....	48.7	2.7	4.2	3.3	.6	5.1	67.2
1968 .....	52.3	3.3	3.9	3.3	.6	5.1	64.6
1969 .....	61.4	3.6	5.2	3.2	.5	5.1	68.5
1970 .....	62.7	3.1	4.7	3.6	.5	5.1	79.0
1971 .....	66.7	3.0	5.1	3.9	0.5	5.1	79.7
1972 .....							85.3
	Broilers and other chickens		Turkey	Ducks	Geese	Offals, incl. livers	Total <sup>3</sup>
Exports:	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>	1,000 m.t. <sup>2</sup>
1955 .....	11.6	0.3	-	0.6	-	-	12.5
1960 .....	37.2	.6	0.1	.4	0.2	-	38.5
1965 .....	47.4	1.4	.8	.6	.3	-	50.5
1966 .....	40.6	2.2	.5	.3	.5	-	44.1
1967 .....	43.4	3.3	.2	.4	.7	-	48.0
1968 .....	38.2	3.2	.2	.3	1.4	-	43.3
1969 .....	41.8	2.4	.7	.4	2.5	-	47.8
1970 .....	43.8	2.8	.4	.4	2.0	-	49.4
1971 .....	48.5	3.9	.3	.3	2.4	-	55.4
1972 .....	46.3	2.9	.5	.3	2.6	-	52.6

<sup>1</sup> Ready-to-cook basis.<sup>2</sup> Product weight.<sup>3</sup> Total may not add due to rounding.

Source: Data in Office of Agricultural Attache, U.S. Embassy, Copenhagen.

Danish exporters claim that the Danish regulation prohibiting water pickup in the chill tank in excess of 6½ percent puts them at a cost disadvantage in selling to West Germany. West Germany had no comparable limitation, while exported Danish birds must meet internal Danish specifications.

Some Danish processors are also concerned about pending German limitations upon the use of immersion-type poultry chillers, while others feel that conformity to the expected regulations will allow imported poultry to dramatize a claim that could not be made for domestic birds. The pending regulation would enforce a ban on immersion-type chillers ("spin chillers") where there is a common chill bath for a batch or series of carcasses, and instead would require that liquid chill medium touching one carcass should not come in contact with another. The West German regulation, sanctioned by EC-Brussels, would have an earlier effective date for imported poultry than for West German poultry.

The technology necessary to conform to the regulation does not yet exist except at sharply higher costs—perhaps doubled costs—for the chilling operations. The approaches being followed to develop an economical technique within the regulation do not contemplate the opportunity to continue the water-pickup aspect of present procedure, and some approaches—airchilling—actually contemplate a weight loss of 1 to 2 percent through unavoidable dehydration. Since processors' usual profits are a smaller percentage than the allowed moisture pickup, a change such as is here indicated will require drastic repricing of carcasses, parts, and products.

The wide range of destinations to which Denmark exports poultry carcasses and parts is a reflection of market development, subsidization, and willingness to cope with detail in satisfying the product specifications and transportation requirements of diverse markets, many of which are—individually—seemingly of relatively small size.

Table 15.—Denmark: Poultry meat exports, by destination, selected years 1955-73

[In thousand metric tons, product weight]

Destination	Calendar years						Jan. - June	
	1955	1960	1965	1970	1971	1972	1972	1973
EC Six:								
West Germany .....	2.93	27.88	13.69	4.09	3.92	2.58	1.66	4.77
Other .....	3.42	.79	.72	.84	.61	.85	0.20	.58
Total .....	6.35	28.67	14.41	4.93	4.53	3.43	1.86	5.35
United Kingdom .....	3.16	2.67	12.40	6.37	8.53	5.67	2.55	2.72
Switzerland .....	2.24	.69	6.83	2.69	5.55	4.18	2.20	2.03
Foreign troops in West Germany .....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	.93	1.50	1.31	.73	.65
Spain and Canary Islands .....	0	--	2.37	.16	1.21	4.77	1.78	0.02
Austria .....	0	.18	3.44	4.54	3.58	2.39	1.17	.87
USSR and E. Europe .....	.01	--	--	8.02	2.30	--	--	0.08
Libya .....	0	.05	.26	.73	.92	1.48	.79	.38
Egypt .....	.02	--	1.25	1.00	1.28	.73	0	0
Greece .....	0	.03	1.93	.44	.34	.27	.09	2.14
Chile .....	--	--	.05	.33	3.10	2.89	1.66	1.42
Other Western Hemisphere .....	.07	--	.10	1.07	1.63	1.66	.81	.76
Bahrain, Trucial States, Qatar .....	0	.03	.77	1.01	1.75	2.03	1.17	1.10
Kuwait .....	0	.07	.79	3.84	3.47	3.82	1.98	.98
Lebanon .....	.02	.14	--	--	.74	2.25	1.36	.52
Saudi Arabia .....	0	.02	.75	1.53	1.12	1.33	.69	.65
Hong Kong .....	.01	.04	.38	3.30	3.53	4.23	1.96	2.42
Japan .....	--	0	.74	1.06	3.59	2.54	1.91	1.16
Singapore, Malaysia .....	.04	.08	1.28	3.19	2.12	1.94	1.14	1.01
French Pacific Posses .....	0	.05	.16	.83	1.32	1.27	.59	.61
Others .....	.54	1.47	2.31	3.33	3.06	4.01	1.10	1.32
Total .....	12.46	34.19	50.22	49.30	55.17	52.20	25.54	26.19

<sup>1</sup> Product weight.<sup>2</sup> Included with West Germany.

Source: Danish Statistical Office.

Much of the export is done by agents or brokers; for example, the manager of one large plant explained that by employing an agent, he was freed of many responsibilities, and also was able to realize cash for his poultry immediately upon shipment from his plant, which was exporting 60 to 70 percent of its output.

The Danish Agricultural Marketing Board, which was established in 1961 to promote Danish exports, has permanent offices in Puerto Rico, Lebanon, Hong Kong, and Japan. These offices assist in market development and other programs for poultry as well as for other Danish agricultural products.

Outlets mentioned within the Danish industry as particularly meriting continued attention and exploitation are Switzerland (p)<sup>9</sup>, Italy (p), (particularly for breast filets), Austria, West Germany (p), Japan, Hong Kong, Singapore, and Libya and the Mideast, particularly the oil-rich states of that region.

The United Kingdom, where recent imports of Danish poultry had been under a quota, is now also in the EC, and the quota is ended. But U.K. production capacity has grown to near self-sufficiency, and Danish interest in the United Kingdom as a poultry market is claimed to be waning. Nevertheless, for the first 6 months of 1973 the United Kingdom was second only to West Germany as an outlet for Danish exports of poultry.

<sup>9</sup>(p) indicates especially for parts. No export data regarding parts existed before January 1973; for certain data since then, see appendix tables 6 and 7.

## The Future

The most dynamic factor in the Danish poultry industry in mid-1973, and one likely to continue, is the tremendous increase in home-market offtake of young chickens—an increase of 47 percent in January-April 1973 compared with that of a year earlier. The expected continuation of this strong home demand is an important factor suggesting no increase—and probably even a decline—in the subsequent availability of Danish chickens for export to third countries outside the EC. The home market absorbed 2,700 extra tons of poultry in January-April 1973 as compared with the year before, out of a total production of 26,000 metric tons.

The expectation of reduced availability for export to third countries is further supported by Denmark's large diversion of poultry exports to West Germany since that market has become accessible. In January-June 1973, 4,000 tons of Danish poultry were shipped to the German market, 3,100 tons more than in the like months in 1972. These initially enlarged shipments to West Germany included experimental probes into the market. While maintenance of the high levels of early 1973 is uncertain, a continued increase over the previous years is practically assured.

Both of the above changes—increased domestic demand and increased exports to Germany—are direct and immediate results of Denmark's entry into the European Community as of February 1, 1973. The increased domestic demand follows from the elimination of the former Home Marketing Tax, which had increased the consumer price of poultry and which was eliminated in order to achieve conformity with the Poultry CAP of the EC.

In finding a new supply equilibrium in response to these two strong demand factors, the Danish poultry industry would like to increase domestic production. Two elements are likely to limit this response: The first is the increase from the accustomed level of Danish feedstuff prices for both cereals and protein concentrates, and the second is labor availability in processing plants.

At the farm, production response will be affected by profit expectations. While broiler prices have risen as compared with the levels of past years, costs—particularly feed costs—have risen also, to an extent that clouds the future with considerable uncertainty. The feed price rises have been the result not only of the change in world price levels, but also the EC accession; a Danish farm organization representative estimated that, before Denmark joined the EC, EC cereal prices averaged 30 percent higher than Danish cereal prices.

Limited availability of processing plant labor in Denmark in mid-1973 was so acute as to hold down the quantity of poultry that was cut up in poultry plants. Continued problems were expected. Work in a poultry plant is sometimes unattractive, and since its pay is low in comparison with other jobs available in Denmark, the work does not tempt most entrants to the labor force.

This analysis concludes that, for the short term, broiler production on Danish farms is not a prospect for a strong growth enterprise.



## Appendix Tables

**Table 1.—Denmark: General economic data, including relation of agriculture (and poultry meat) to total, selected years, 1955-72**

Year	Gross National Product	Value of agricultural production		Population		Gross factor income from agriculture as percent of national total
		In monetary terms	As percent of GNP	Total	On farms as percent of total	
	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Percent</i>	<i>Million</i>	<i>Percent</i>	<i>Percent</i>
1955.....	31,269	6,360	20	4.4	20.4	16
1960.....	44,430	7,567	17	4.6	16.6	12
1965.....	76,065	9,224	12	4.8	12.9	9
1970.....	127,888	10,407	8	4.9	9.4	6
1971.....	140,892	11,010	8	5.0	9.0	6
1972.....	159,894	12,400	8	5.0	8.7	6

Year	Exports				Financial data	
	Total	Agricultural <sup>1</sup>			Exchange rate kr. per US\$100 <sup>2</sup>	Index of consumer prices (1964 = 100)
		Value	As percent of total	Of which poultry meat		
	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Percent</i>	<i>Mil. kr.</i>	<i>Kroner</i>	
1955.....	7,331	4,435	61	71	691	
1960.....	10,159	5,261	52	175	690	
1965.....	15,702	6,613	42	207	692	106
1970.....	24,673	7,222	29	214	750	145
1971.....	26,739	7,622	29	242	741	154
1972.....	30,089	8,223	27	237	694	164

<sup>1</sup> In accord with Danish definitions, which exclude horticultural products and certain processed products of agricultural origin. 1955 data not strictly comparable to subsequent data, on definitional basis.

<sup>2</sup> Average for the year.

**Table 2.—Denmark: Value of agricultural production, by principal commodity group, <sup>1 2</sup> selected years 1955-72**

Year	Total	Principal commodity group <sup>3</sup>					
		Swine	Milk, dairy prod.	Beef, veal	Poultry meat	Eggs	Cash crops <sup>2</sup>
	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Mil. kr.</i>	<i>Mil. kr.</i>
1955.....	6,360	2,270	1,942	918	139	582	607
1960.....	7,567	2,706	1,912	1,270	244	443	803
1965.....	9,224	3,495	2,514	1,540	233	330	988
1970.....	10,407	4,428	2,979	1,751	278	290	1,046
1971.....	11,010	4,326	3,284	1,736	284	265	1,211
1972.....	12,400	4,478	3,711	2,000	321	267	1,321

<sup>1</sup> Including the value of certain subsidies.

<sup>2</sup> Not including crops re-incorporated into agricultural production (hay, feed crops) nor horticultural crops, which are excluded from the Danish definition of "agriculture."

<sup>3</sup> In general, value at farm, but for some commodities value at point where sale price applies, such as slaughter plant or creamery.

Table 3.—Denmark: Representative formulae for broiler rations, selected dates, 1973

Item, unit	January		Late June	
	Broiler starter	Broiler grower	Broiler starter	Broiler grower
Percentage composition:				
Meat and bone meal.....	--	--	2.	--
Herringmeal, salt free.....	1.	--	3.	1.
Soybean meal.....	31.5	31.	19.	19.5
Fat.....	1.5	2.	1.	1.5
Maize.....	40.	40.6	37.	33.
Wheat.....	19.66	20.	32.50	37.8
Molasses.....	2.	2.	2.	2.
Methionine.....	.07	.03	.10	.03
Mineral items <sup>1</sup> .....	3.27	3.37	2.40	3.17
Supplemental mixture <sup>2</sup> .....	1.	1.	1.	1.
Total.....	100	100	100	100
Protein.....	19.	18.	17.	16.
Kilo-calories per kilogram (approximate).....	3,100	3,100	3,100	3,100
Price to grower, Kroner per 100 kilograms.....	109	103	152	145
Equivalent, dollars per 100 pounds <sup>3</sup> .....	7.27	6.87	13.39	12.77

<sup>1</sup> Levels of the various minerals are specified in the formulation.<sup>2</sup> Details of vitamin-mix and other micro-ingredients are specified in the formulation.<sup>3</sup> At 6.8 kr.=US \$1 in January and 5.6 kr.=US\$1 in late June.

Table 4.—Denmark: Producer and wholesale prices for broilers, cattle, and swine, selected months 1972-73

Month and year	Broilers, extra class		Cattle, best quality			Swine, best quality	
	Producer <sup>1</sup>	Wholesale <sup>2</sup>	Steers producer <sup>1</sup>	Heifers	Steers and heifers wholesale <sup>2</sup>	Producer <sup>1</sup>	Wholesale <sup>2</sup>
	Kr./Kg. <sup>3</sup>	Kr./Kg. <sup>3</sup>	Kr./Kg.	Kr./Kg.	Kr./Kg.	Kr./Kg. <sup>3</sup>	Kr./Kg. <sup>3</sup>
July 1972.....	3.00	6.65	5.98	5.79	9.68	5.15	7.75
October 1972.....	3.34	6.65	5.86	5.37	9.91	5.41	7.85
January 1973.....	3.51	6.61	6.39	5.83	10.65	6.54	7.95
February 1973.....	3.76	6.30	6.47	5.95	10.60	6.92	8.08
March 1973.....	4.01	6.55	6.46	5.99	11.07	7.42	8.59
April 1973.....	4.10	6.55	6.48	6.12	11.74	8.10	9.24
May 1973.....	4.18	6.55	6.46	6.19	11.89	8.42	9.39
June 1973.....	4.25	6.73	6.08	6.07	11.64	8.31	9.38

<sup>1</sup> Producer prices including producer subsidies from the Home Market Scheme and other schemes (Grain Fund, etc.)<sup>2</sup> Wholesale prices obtained on the meat market in Copenhagen.<sup>3</sup> Slaughter weight.

Note: The increase in the producer price for swine in January 1973 was due to a reduction in the Home Market Fee for swine from 1.66 kr./kg. on January 1 to 0.76 kr./kg. (slaughter weight) later in January.

Source: Danish Statistical Office, Statistical Reports Amendment IX, Copenhagen 1973.

Table 5.—Comparative density of annual broiler production, Denmark and selected U.S. States and counties

Country and subdivision	Broilers produced	Land area <sup>1</sup>	Broilers per square mile
	<i>Millions</i>	<i>Sq. miles</i>	<i>Thousands</i>
<b>Denmark, 1972<sup>2</sup></b> .....			
Jutland .....	62.1	16,629	3.7
Fyn .....	52.2	11,436	4.6
Zealand .....	4.3	1,346	3.2
	5.6	2,901	1.9
<b>United States, Nov. 1971-72<sup>3</sup></b> .....			
Delaware .....	2,996.1	3,615,211	.8
Maryland .....	131.9	1,982	66.5
Arkansas .....	177.2	9,891	17.9
Alabama .....	532.1	51,945	10.2
Georgia .....	399.3	50,708	7.9
North Carolina .....	442.9	58,073	7.6
Mississippi .....	301.8	48,798	6.2
West Virginia .....	256.2	47,296	5.4
South Carolina .....	16.0	24,070	.7
Connecticut .....	28.3	30,225	.9
	3.3	4,862	.7
<b>United States, 1969<sup>4</sup></b> .....			
Cullman (Ala.) .....	116.3	743	156.5
Sussex (Del.) .....	109.5	950	115.3
Washington (Ark.) .....	77.5	958	80.9
Wicomico (Md.) .....	51.8	381	136.0
Benton (Ark.) .....	50.9	851	59.8
Wilkes (N.C.) .....	44.6	765	58.3
Worcester (Md.) .....	37.8	479	78.9
Scott (Miss.) .....	36.7	615	59.7
Stanislaus (Cal.) .....	36.2	1,511	24.0
Chatham (N.C.) .....	34.2	707	48.4
Murray (Ga.) .....	5.5	342	16.1
Lincoln (La.) .....	5.5	469	11.7
Stephens, Ga. ....	5.4	180	30.0
Union (La.) .....	5.3	906	5.4
Talbot (Md.) .....	5.3	261	20.3

<sup>1</sup> From *Webster's New Geographical Dictionary*, and *World Almanac*.

<sup>2</sup> 1972 broiler production estimate prorated among subdivisions in accord with percentage distribution of total poultry production.

<sup>3</sup> Data from Statistical Reporting Service, USDA. States selected from 20 largest producers.

<sup>4</sup> Data from Census of Agriculture, 1969. Counties selected rank 1-10 and 96-100 in number of broilers sold.

Table 6.—Denmark: Exports of poultry meat (fresh, chilled, and frozen) by item, January-April 1973

Description and commodity classification <sup>1</sup>	Quantity	Value
	<i>Metric tons</i>	<i>1,000 kr.</i>
Whole chickens:		
"83%" (French-dressed)(.101) . . . . .	257	1,489
"70%" (ready to cook)(.102) . . . . .	11,241	56,759
"65%" (grillers, with gib)(.103) . . . . .	853	4,740
Total . . . . .	12,351	62,988
Chicken parts:		
Halves and quarters (.302) . . . . .	180	1,057
Wings, w, w/o tips (.303,.425) . . . . .	423	1,699
Backs, necks, etc <sup>2</sup> (.304,.426) . . . . .	436	648
Breasts and pieces (.305,.433) . . . . .	388	3,332
Thighs and drumsticks (.306,.437) . . . . .	1,020	7,028
Other parts (.309,.438) . . . . .	90	435
Boned meat (.301) . . . . .	360	3,997
Total . . . . .	2,897	18,196
Turkeys and parts:		
Whole turkeys (.205) . . . . .	219	1,620
Halves and quarters (.423) . . . . .	16	118
Breasts (.432) . . . . .	21	364
Thighs and drumsticks (.435) . . . . .	39	270
Other (.436) . . . . .	14	122
Total . . . . .	309	2,494
Other poultry:		
Ducks: whole (.201,.202) . . . . .	422	2,880
halves and quarters (.421) . . . . .	11	67
Geese (.204) . . . . .	6	53
Guinea fowl (.206) . . . . .	1	12
Total . . . . .	440	3,012
Boned meat, other than of chicken (.411) . . . . .	137	1,986
Giblets of all poultry except livers (.900) . . . . .	604	1,602
Poultry livers, except of fat geese (.009) <sup>3</sup> . . . . .	146	952
Grand total . . . . .	16,884	90,690

<sup>1</sup> Unless indicated otherwise, classification prefix is 02.02.<sup>2</sup> And tails and wing tips.<sup>3</sup> Classification prefix 02.03.

Table 7.-Denmark: Exports of selected poultry meats and products, quantity and value, by destination, January-April 1973 and comparison with U.S. total

Country of destination, and (Danish) country code number	Denmark										United States		
	Chicken					Turkeys					Ducks incl. parts		
	Whole		Parts			Whole		Parts			Quantity		Value
	Quantity	Value	Quantity	Value	1,000 kr.	Quantity	Value	Quantity	Value	1,000 kr.	Metric tons	Metric tons	Value
	Metric tons	1,000 kr.	Metric tons	1,000 kr.	1,000 kr.	Metric tons	1,000 kr.	Metric tons	1,000 kr.	1,000 kr.	Metric tons	Metric tons	Value
<b>Europe:</b>													
France, 1	39	211	1	2									
Belgium, Luxembourg, 2	11	54											
Netherlands, 3													
West Germany, 4													
Italy, 5	1,875	11,079	25	195									
United Kingdom, 6	129	763	309	2,896	1,041								
Foreign Troops in West Germany, 15	599	3,557	174	1,201									
Norway, 28	251	1,324	92	487	245								
Sweden, 30	99	556	2	12	(3)								
Finland, 32	36	204	1	6									
Switzerland, 36	72	374	(3)	(3)									
Austria, 38	657	3,080	653	5,644	178								
Portugal, 40	395	2,045	97	865	(3)								
Spain, 42													
Gibraltar, 44	1	7	1	5									
Malta, 46	83	360	11	81									
Greece, 50	61	235	9	74	4								
U.S.S.R., 56	2,016	10,325	3	12									
Poland, 60	(3)	1	(3)	(3)									
Roumania, 66			(3)	(3)									
<b>Africa:</b>													
Canary Islands, 202													
Tunisia, 212	10	53	(3)	4									
Libya, 216	(3)	2	(3)	(3)									
Gambia, 252	221	1,316	(3)	2									
Liberia, 268	1	6	(3)	(3)									
Ivory Coast, 272	23	115	6	4									
Nigeria, 288	(3)	1	(3)	(3)									
French Somaliland, 338	1	3	(3)	4									
Seychelles Islands, 355	6	24	(3)	3									
Reunion Islands, 372	30	159	(3)	(3)									
Mauritius, 373	25	138	(3)	(3)									
	30	172											
<b>Western Hemisphere:</b>													
Bermuda, 413	62	296	82	531									
Panama, 440	2	11											
Guadeloupe, et al, 458	10	41	1	5									
Martinique, 462	8	27											
British West Indies, 470	8	35	5	22									
Anba, 474	8	40	15	98									
Venezuela, 478	45	215	28	175									
Guyana, 484			(3)	(3)									
Guyana, 488													
Surinam, 492													
Brazil, 508	15	75	1	5									
Chile, 512	209	1,070	(3)	(3)									
	929	4,824											
<b>Asia and Oceania:</b>													
Lebanon, 604	257	1,174	(3)	4									
Afghanistan, 620	2	9	15	15									
Israel, 624	42	251	(3)	(3)									
Saudi Arabia, 632	182	812	16	74									
Kuwait, 636	384	1,774	11	65									

Exports listed to 18 European countries, totaling 14,447,000 pounds (6,533 m.t.) valued at \$5.4 million.

Exports listed to 7 African countries and importing entities, 374,000 pounds (170 m.t.) valued at \$104,000.

Exports listed to 20 Western Hemisphere countries and importing entities, totaling 20,269,000 pounds (9,194 m.t.) valued at \$6.2 million.

Table 7.-Denmark: Exports of selected poultry meats and products, quantity and value, by destination, January-April 1973 and comparison with U.S. total--Continued

Country of destination, and (Danish) country code number	Denmark										United States	
	Chicken					Turkeys					Ducks incl. parts	
	Whole		Parts			Whole		Parts			Total poultry meat	
	Quantity	Value	Quantity	Value	Value	Quantity	Value	Quantity	Value	Quantity	Value	Value
	Metric tons	1,000 kr.	Metric tons	1,000 kr.	1,000 kr.	Metric tons	1,000 kr.	Metric tons	1,000 kr.	Metric tons	1,000 kr.	
Asia and Oceania--Continued:												
Bahrain, 640.....	144	652	1	47								
Qatar, 644.....	124	547	3	18								
Dubai, 645.....	160	652	36	183	1							
Aber Dhabi, 646.....	94	496										
Oman, 649.....	18	91	(3)	3	16							
Yemen, 652.....	4	24										
South Yemen, 656.....	10	41	1	3								
Pakistan, 662.....	(3)											
Bangladesh, 666.....	(3)											
Maldives Islands, 667.....	6	37										
Nepal, 672.....	1	5	(3)	4								
Laos, 684.....	2	10										
Indonesia, 700.....	10	49	1	8								
Malaysia, 701.....	36	177	4	28								
Brunei, 703.....	7	40	1	5								
Singapore, 706.....	643	3,318	37	233	160							
Japan, 732.....	1,475	6,394	333	2,016	11							
Taiwan, 736.....	71	404			276							
Hong Kong, 740.....	1,405	5,991	33	141	459							
New Caledonia, 809.....	63	256	6	37	25							
Wallis and Futuna, 811.....	2	8										
Fiji, 815.....	29	126	(3)	2								
New Hebrides, 816.....	12	57										
West Samoa, 819.....	335	1,484	29	180	71							
French Polynesia, 822.....												
World total, January-April, 1973 <sup>4</sup>	12,351	62,988	1,948	15,414	2,735	219	1,620	230	2,860	433	2,947	
Quantity, mt.....												
Value, 1,000 kr. ....												

Exports listed to 18 Asian and Oceania countries and importing entities, totaling 13,127,000 pounds (5,954 mt.) valued at \$4.5 million.

<sup>1</sup> The more expensive parts: halves and quarters; breasts and pieces; thighs and drumsticks; boned meat.

<sup>2</sup> The less expensive parts: wings; backs, necks, tails and wingtips; other parts; giblets (of all poultry).

<sup>3</sup> Less than 0.5 ton or 500 kroner.

<sup>4</sup> May not add due to rounding.

Source: Unpublished material: corresponding material available on a quarterly basis in *Kvartalsstatistik over Udvareksstatistik*, Denmark's Statistic, Copenhagen.